Claim 4 (original)

The optical apparatus of claim 2 wherein each micromirror is pivotable about at least one axis.

Claim 5 (original)

The optical apparatus of claim 1 wherein said beam-manipulating elements comprise MEMS (micro-electro-mechanical-system) shutter-elements.

Claim 6 (original)

The optical apparatus of claim 1 wherein said beam-manipulating elements comprise liquid crystal shutter-elements.

Claim 7 (original)

The optical apparatus of claim 1 wherein said wavelength-disperser comprises an element selected from the group consisting of ruled diffraction gratings, curved diffraction gratings, holographic diffraction gratings, echelle gratings, transmission gratings, and dispersing prisms.

Claim 8 (previously presented)

The optical apparatus of claim 1 wherein said array of optical detectors comprises an element selected from the group consisting of PN photo detectors, PIN photo detectors, and avalanche photo detectors.

Claim 9 (original)

The optical apparatus of claim 1 wherein said input port comprises a fiber collimator, coupled to an input optical fiber transmitting said multi-wavelength optical signal.

Claim 10 (original)

The optical apparatus of claim 9 wherein said input optical fiber is a single mode fiber.

Claim 11 (original)

The optical apparatus of claim 1 further comprising a beam-focuser for focusing said spectral channels into corresponding focused spots that impinge onto said beam-manipulating elements.

Claim 12 (original)

The optical apparatus of claim 1 further comprising a reference signal, emerging from said input port along with said multi-wavelength optical signal, wherein said wavelength-disperser directs a reference spectral component of said reference signal to a predetermined location on a reference-position-sensing element.

Claim 13 (original)

The optical apparatus of claim 12 wherein said reference-position-sensing element comprises an element selected from the group consisting of position sensitive detectors, quadrant detectors, and split detectors.

Claim 14 (original)

The optical apparatus of claim 12 wherein said input port comprises a fiber collimator coupled to an input optical fiber, wherein said optical apparatus further comprises an optical combiner for coupling a reference light source to said input optical fiber, and wherein said input optical fiber transmits said multi-wavelength optical signal and said reference light source provides said reference signal.

Claim 15 (original)

The optical apparatus of claim 12 further comprising an alignment-adjusting element for adjusting an alignment between said spectral channels and said beam-manipulating elements.

Claim 16 (original)

The optical apparatus of claim 15 wherein said beam-manipulating elements and said reference-position-sensing element form an optical-element array, and wherein said

alignment-adjusting element comprises an actuation device coupled to said optical-element array, for causing said optical-element array to move.

Claim 17 (original)

The optical apparatus of claim 15 further comprising a processing element in communication with said alignment-adjusting element and said reference-position-sensing element, wherein said processing element monitors an impinging position of said reference spectral component onto said reference-position-sensing element and provides control of said alignment-adjusting element accordingly, so as to maintain said reference spectral component at said predetermined location, thereby ensuring a requisite alignment between said spectral channels and said beam-manipulating elements.

Claim 18 (currently amended)

An optical apparatus, comprising:

a) an input port, providing a multi-wavelength optical signal;

b) a polarization-separating element that decomposes said multi-wavelength optical signal into first and second polarization components;

c) a polarization-rotating element that rotates a polarization of said second polarization component by approximately 90-degrees;

d) a wavelength-disperser that separates said first and second polarization components by wavelength respectively into first and second sets of optical beams;

e) a beam-focuser that focuses first and second sets of optical beams into corresponding focused spots;

f) an array of beam-manipulating elements positioned to correspond with said first and second sets of optical beams; and

g) at least one ~~first~~ array of optical detectors for monitoring power associated with said first and second polarization components; ~~and~~

~~h) at least one second optical detector for monitoring power associated with said second polarization component;~~

wherein said beam-manipulating elements are individually controllable, so as to be capable of directing some of said ~~such that~~ ~~first and second~~ optical beams ~~associated with each wavelength are directed~~ into said at least one ~~first~~ array of optical detectors concurrently ~~and said at least one second optical detector, respectively,~~ and capable of directing some of said optical beams into said at least one array of optical detectors in a time-division-multiplexed sequence.

Claim 19 (original)

The optical apparatus of claim 18 wherein said beam-manipulating elements comprise micromirrors.

Claim 20 (original)

The optical apparatus of claim 19 wherein said micromirrors comprise silicon micromachined mirrors.

Claim 21 (original)

The optical apparatus of claim 19 wherein each micromirror is pivotable about at least one axis.

Claim 22 (original)

The optical apparatus of claim 18 wherein said beam-manipulating elements comprise liquid crystal shutter-elements.

Claim 23 (original)

The optical apparatus of claim 18 wherein said beam-manipulating elements comprise MEMS shutter-elements.

Claim 24 (original)

The optical apparatus of claim 18 wherein said polarization-separating element comprises an element selected from the group consisting of polarizing beam splitters and birefringent beam displacers.

Claim 25 (original)

The optical apparatus of claim 18 wherein said polarization-rotating element comprises an element selected from the group consisting of half-wave plates, liquid crystal rotators, and Faraday rotators.

Claim 26 (original)

The optical apparatus of claim 18 wherein said wavelength-disperser comprises an element selected from the group consisting of ruled diffraction gratings, holographic diffraction gratings, echelle gratings, curved diffraction gratings, transmission gratings, and dispersing prisms.

Claim 27 (original)

The optical apparatus of claim 18 wherein said beam-focuser comprises at least one focusing lens.

Claim 28 (original)

The optical apparatus of claim 18 wherein said input port comprises a fiber collimator.

Claim 29 (currently amended)

The optical apparatus of claim 18 wherein said at least one ~~first~~ array of optical detectors ~~and said at least one second optical detector each~~ comprises a single array of optical detectors.

Claim 30 (canceled)

Claim 31 (currently amended)

The ~~spectral monitoring~~ optical apparatus of claim 18 wherein said at least one ~~first~~ array of optical detectors ~~and said at least one second optical detector each~~ comprises at least one element selected from the group consisting of PN photo-detectors, PIN photo detectors, and avalanche photo detectors.

Claim 32 (currently amended)

A method of spectral power monitoring ~~using a time-division multiplexed scheme~~, comprising:

a) providing a multi-wavelength optical signal;

b) separating said multi-wavelength optical signal by wavelength into multiple spectral channels; and

c) selectively directing said spectral channels into an array of optical detectors, such that ~~each of~~ some of said spectral channels ~~is~~ are capable of being received by ~~a unique one of~~ said optical detectors concurrently and some of said spectral channels are capable of being received by said optical detectors in a time-division-multiplexed sequence.

Claim 33 (canceled)

Claim 34 (canceled)

Claim 35 (original)

The method of claim 32 wherein said step c) is carried out by way of an array of micromirrors that are individually movable.

Claim 36 (currently amended)

A method of optical spectral power monitoring, comprising:

a) providing a multi-wavelength optical signal;

b) decomposing said multi-wavelength optical signal into first and second polarization components;

c) rotating a polarization of said second polarization component by approximately 90-degrees;

d) separating said first and second polarization components by wavelength respectively into first and second sets of optical beams;

e) focusing said first and second sets of optical beams into corresponding focused spots;

f) impinging said first and second sets of optical beams onto an array of beam-manipulating elements; and

g) individually controlling said beam-manipulating elements, such that ~~said first set~~ some of said optical beams ~~is~~ are capable of being directed into at least one ~~first~~ array of optical detectors concurrently and some of said optical beams are capable of being directed into said at least one array of optical detectors in a time-division-multiplexed sequence, whereby said at least one ~~first~~ array of optical detectors monitors power associated with said first and second polarization components~~, and said second set of optical beams is directed into at least one second optical detector in a time-division multiplexed sequence, whereby said at least one second optical detector monitors power associated with said second polarization component~~.

Claim 37 (canceled)

Claim 38 (canceled)